

NEWSLINE

Published weekly for employees of Lawrence Livermore National Laboratory

Friday, November 19, 2004

Vol. 29, No. 46

Lab managers do some HOME building



JACQUELINE MCBRIDE/NEWSLINE

From left: Dave Leary, Steve Patterson, Michael Anastasio and Steve Cochran erect a house frame. Inset: Jan Tulk helps secure a frame.

Laboratory senior managers donned work gloves, safety glasses, aprons and tool belts to help erect frames for homes in Livermore last Saturday, as part of an East Bay Habitat for Humanity LLNL Day.

The Lab volunteer day was part of the 2004 HOME Campaign, chaired by Al Moser of Chemistry and Materials Science (CMS). Kim Hallock, a CMS employee and HOME

See **HABITAT**, page 8

New Mexico governor urges UC to partner with industry for management of LANL

New Mexico Gov. Bill Richardson pushed the University of California Board of Regents on Wednesday to partner with an industrial company to continue management of Los Alamos National Laboratory.

“Los Alamos and its role in national defense and its renowned researchers and scientific staff are extremely important to the country and the state of New Mexico,” Richardson said. “I urge the UC Board of Regents to continue its long history of public service by competing for

See **REGENTS**, page 4

UK and US defense programs take stock of weapons issues

By David Schwoegler

NEWSLINE STAFF WRITER

The National Nuclear Security Administration, the Director’s Office and the Defense and Nuclear Technologies Directorate jointly organized and hosted a two-day “Stocktake” gathering with British scientists and national defense experts this week.

See **STOCKTAKE**, page 7

Biomolecules serve as source of inspiration for scientists manipulating shapes of crystals

By Anne M. Stark

NEWSLINE STAFF WRITER

Using biominerals as an inspiration, Laboratory physicist Jim De Yoreo and his research team have determined a key factor in how to manipulate the shapes of crystals.

In a series of experiments using an atomic force microscope, De Yoreo’s team and that of Patricia Dove, a geoscientist from Virginia Polytechnic Institute and State University, used four different biomolecules to study their effects on the dynamics of atomic steps during crystallization. They set out to test a two-decade-old model of crystal-shape modification believed to be at odds with classic theories of crystal growth. Their results appear in the Nov. 19 issue of the journal, *Science*.

The main focus of the work was on the mineral calcite, which has more than 300 identified crystal forms that can combine to produce at least a thousand different crystal variations. Crystals can form a thousand different shapes by combining the basic forms of the positive rhombohedron (a prism with six faces,

See **CRYSTALS**, page 3

Supercomputing is a community effort

With the ranking of BlueGene/L and Thunder as the first and fifth most powerful computers on the Top500 list announced at Supercomputing 2004 in Pittsburgh last week, the Laboratory opened a new chapter in a long and distinguished history of pioneering scientific computing.

BlueGene/L (BG/L) topped the list with a record-breaking performance of 70.72 teraflops, or trillion floating operations per second, measured using the industry-standard LINPACK benchmark. IBM developed the innovative system, which requires a fraction of the power and floor space of previous supercomputers, in collaboration with Laboratory researchers who will use the system.

Amazingly, BG/L accomplished the above

FROM THE
DIRECTOR’S
OFFICE

— DONA CRAWFORD



performance with only one-fourth the system. The complete BG/L system will ultimately reside in the Terascale Simulation Facility — Bldg. 453 — come next spring.

Thunder, an LLNL Linux cluster, finished fifth

by achieving 19.94 teraflops while calculating the LINPACK benchmark. Between BG/L and Thunder were NASA’s machine Columbia (named in honor of the space shuttle) at 51.87 teraflops, the Japanese Earth Simulator Center with 35.86 teraflops, and the Barcelona (Spain) Supercomputer Center, hitting

Photos from **SC2004**
— Page 3

See **SUPERCOMPUTING**, page 3



Celebrating Native American heritage

— Page 2



Guiding the guide dogs

— Page 5



Leaping natural boundaries

— Page 8



LAB COMMUNITY NEWS

Weekly Calendar

Technical Meeting Calendar, page 4

Friday
19

The Pleasanton Downtown Association will celebrate a "Season of Giving" with an evening of shopping at participating downtown stores tonight at 5-9 p.m. There will be holiday music, food, and prize drawings. Five percent of all sales for the evening will benefit Livermore's Shepherd's Gate haven. For more information call 484-2199.

•••

Brighter Holidays has a list of more than 100 families ready to be sponsored. If you are interested in sponsoring a family, contact Betty Klino, at 443-0642 or nkline@hotmail.com. Bicycle donations also are being accepted. Many children ask for their first bike through this program and some adults use bikes to get to and from work. If you have "repairable" bikes that you would like to donate, contact Xavier Cabrales, 2-7448. Tell him these are for Brighter Holidays and he will set up arrangements for the drop off of the bikes. Anyone requesting bicycles for their family must contact Cabrales. Members of the LLNL Cycletrons Club have volunteered to repair bikes. For further information or questions, contact Klino or Karen Rosenberg, 2-8551.

Wednesday
24

Site 300 will be closed for the Thanksgiving holiday today through Friday (Nov. 26.)

Friday
26

The **Lab's Discovery Center** will be open to the public today, Nov. 26 (the day after Thanksgiving) from 10 a.m. to 2 p.m. Located at East Gate Drive and Greenville Road, the Discovery Center provides visitors with a window into state-of-the-art research programs, computational capabilities and experimental tools. No badging is required. For more information, call 3-3272.

Up
&
Coming

Looking for an interesting activity for friends and family who will be visiting during the holidays? Want them to learn more about where you work? Why not sign them up for a **tour of the Laboratory**. The Public Affairs Office provides community tours for those 18 years and older on Tuesday and Thursday mornings, with stops at some of the Lab's key programs. There are a limited number of openings and advanced registration is required. For more information, call 4-6575.

•••

On Tuesday, Nov. 30, the **Computer Museum** in Mountain View will celebrate the life and times of APL (A Programming Language) and J (J Language) creator Kenneth Iverson. For more information about this and other upcoming events planned by the museum, go to <http://www.computerhistory.org/whats.html>



JULIE KORHUMMEL/NEWSLINE

Traditional dance

Marcus Madrill of the Four Winds dance group performed the Men's Northern Traditional Dance at a Native American Indian Heritage Month Celebration on Wednesday at the pool area. The group's toy drive continues through the end of the month. Other activities scheduled later this month include: Tuesday, Nov. 23 - "Navajo Code Talkers," documentary from noon-1 p.m., Trailer 5475, room 1145 and on Tuesday, Nov. 30 - "The Mascot Controversy," by Amber Machamer from noon-1 p.m., in the Bldg. 361 auditorium.

Motorcycle ride scheduled to raise funds for U.S. troops

Lab employee Yvette Strope is currently coordinating Christmas donations for some U.S. troops serving in Iraq and Afghanistan.

Employees who would like to participate can join the noon-time motorcycle ride to Site 300 scheduled for Wednesday, Dec. 1. Riders will be asked to donate up to \$25 or new CDs, DVDs, video games or books to participate.

All monetary donations will be used to buy supplies and gifts for U.S. troops. Riders from outside the Laboratory or from Sandia may participate by joining

the ride from the Discovery Center's parking lot off of Greenville Road.

The route will take Laboratory riders from the starting point at B7-N parking lot, one loop around Inner Loop Road, exit East Main Gate, turn south on Greenville Road and then east on Tesla Road to Site 300. Donations will be presented to Strope at the Site 300 Fire Station.

To participate, contact Ted Sheppard, 3-0787, sheppard1@llnl.gov, or Derrick Davis, 2-7685, davis12@llnl.gov.

Updated Public Affairs Website directs visitors to Lab news

Community leaders, the news media, collaborators and the public should find it easier to get news and information about the Laboratory, thanks to a revamped LLNL public affairs Website launched last week.

The new site, www.llnl.gov/pao, has an updated design and navigational structure, as well as several new features aimed at improving access to the services provided by the Laboratory's Public Affairs Office (PAO).

"Our goal was to make it as easy as possible for the Lab's many audiences to quickly locate the information they need," said Susan Houghton, PAO director. "We wanted to offer a snapshot of the Lab and its activities, so reporters and community members can quickly peruse the site and learn about the lab in an easily accessible format."

Houghton said an important new feature of the site is a "newsroom" page designed to provide news reporters with ready access to Laboratory news releases, statements, fact sheets, management biographies and photos, and downloadable high-resolution photographs. A new "video library" contains video clips describing LLNL programs and events.

Another new feature is a 'contact' page that lists areas of science and technology, community and external affairs activities, and Laboratory operations. Visitors who click on a topic will see the name, phone number and e-mail address of the public affairs staffer responsible for providing information about that topic.

The site's community and external relations pages provide information on the Lab's Discovery Center, how to arrange for tours of the Lab, community newsletters and a Lab-sponsored cable television program, educational and outreach programs, and LLNL's activities to protect the environment.

The employee news section has links to current and past issues of *Newsline*, the Laboratory's weekly newsletter, as well as a calendar of upcoming technical meetings and seminars and a list of recent awards won by Lab employees.

Lab employees should note that they can no longer submit classified ads for *Newsline* from the Lab's external Website. Instead, employees should visit the "News" page on "MyLLNL," the Laboratory's internal portal, and click on "Classified Ads." LLNL retirees, however, can continue to submit classified ads by visiting www.llnl.gov/pao/employee/.

Newsline

Newsline is published weekly by the Internal Communications Department, Public Affairs Office, Lawrence Livermore National Laboratory (LLNL), for Laboratory employees and retirees.

Contacts:

Media & Communications manager: Lynda Seaver, 3-3103

Newsline editor: Don Johnston, 3-4902

Contributing writers: Bob Hirschfeld, 2-2379; Charles Osolin, 2-8367; David Schwoegler, 2-6900; Anne M. Stark, 2-9799; Stephen Wampler, 3-3107. For an extended list of Lab beats and contacts, see <http://www.llnl.gov/llnl/06news/NewsMedia/contact.html>

Photographer: Jacqueline McBride

Designer: Julie Korhummel, 2-9709

Distribution: Mail Services at LLNL

Public Affairs Office: L-797 (Trailer 6527), LLNL, P.O. Box 808, Livermore, CA 94551-0808

Telephone: (925) 422-4599; Fax: (925) 422-9291

e-mail: newsline@llnl.gov or newsonline@llnl.gov

Website: <http://www.llnl.gov/PAO/>

SUPERCOMPUTING

Continued from page 1

20.53 teraflops.

As one of the world's premier laboratories for high-performance computing, it is gratifying to again have bragging rights to the world's most powerful supercomputer. More importantly, however, it brings unprecedented computing capability to the fulfillment of our national security missions and the support of science programs. Increasingly, Lab programs rely on the detailed, three-dimensional simulations these systems make possible to guide scientific discovery and engineering development.

Breakthrough science by teams of researchers from different disciplines has long been a hallmark of this Laboratory, and high-performance computing is no exception. The achievement of BlueGene/L was a tremendous team effort from top to bottom with the Department of Energy, National Nuclear Security Administration, IBM and Lab scientists working together. Application of BG/L's power to the NNSA program to ensure the safety and reliability of the nation's nuclear deterrent also will be a team effort with Los Alamos and Sandia national labs through the Advanced Simulation and Computing (ASC) program.

In keeping with the Lab's cutting-edge role in scientific computing, Laboratory researchers and support staff played a key role at the annual Supercomputing conference, held this year from Nov. 6-12, under the theme "Bridging Communities," which refers to the interactions between high-performance computing, networking and storage. The conference is an opportunity for members of the international supercomputing community from industry, academia and research laboratories to exchange ideas and learn about new developments in this rapidly evolving field. Advancing supercomputing for the benefit of all is a community endeavor.

About 50 employees from Computation and other Lab organizations participated in the conference. They assembled and ran the ASC tri-lab booth, presented tutorials and technical results on the booth power wall, authored and presented technical peer-reviewed papers and led plenary meetings. In addition, Jean Shuler of Computation and Barry Goldman from the Lab's Science and Technology Education Program fielded a job fair booth for students attending the conference. Recruiting new talent is important to maintaining the vitality that makes us a leader in supercomputing.

Laboratory researchers won an award in the StorCloud Challenge for "Best Random Access Use." The challenge measured applications that demand fast data-transfer rates or used multiple file systems in

Supercomputing 2004 Pittsburgh



DON JOHNSTON/NEWSLINE

Clockwise from top right: The tri-lab Advanced Simulation and Computing program booth.

Computation's Lynn Kissel makes a presentation at the booth power wall.

Barry Goldman of STEP and Jean Shuler of Computation talk to students at a job fair.

From left, Dimitri Kusnezov of NNSA, Dona Crawford, Horst Simon of the Top500 and Lawrence Berkeley Lab, and Tilak Agerwala, a vice president at IBM, at the Top500 press conference.

Mike McCoy and Tilak Agerwala of IBM in front of a BlueGene/L rack in the IBM booth.

interesting and comparative ways. Lab-developed Blockbuster, a scalable animation display application, took top honors.

As impressive as the Lab's new computing capabilities promise to be, the scientific challenges of stockpile stewardship will require the development of even more powerful computers. The capabilities we develop to address these challenges will in turn advance other science domains.

Dona Crawford is the associate director for Computation.

CRYSTALS

Continued from page 1

each a rhombus), negative rhombohedron, steeply, moderately and slightly inclined rhombohedrons, various scalahedrons, prism and pinacoid.

De Yoreo and Dove first determined that when combined with magnesium, the corners formed by the intersection of atomic steps flatten and roughen, leading to flattening of the crystal's corners and elongation and roughening of the crystal shape.

When combined with acidic amino acids, both the step and crystal shapes changed to reflect the handedness (whether the molecule was right-handed or left-handed) of the amino acids. Molecular simulations showed that the step edges provided the most favorable binding environment for the acids.

When citrate, a naturally occurring inhibitor and therapeutic agent, was used in the experiment, the change in crystal shape again mimicked the change in step shape, and molecular models also identified the steps as the preferred interaction sites.

In the last experiment, calcite crystals were combined with a protein extracted from abalone nacre, a pearly substance that lines the interior of many shells, and is most perfect in the mother-of-pearl.

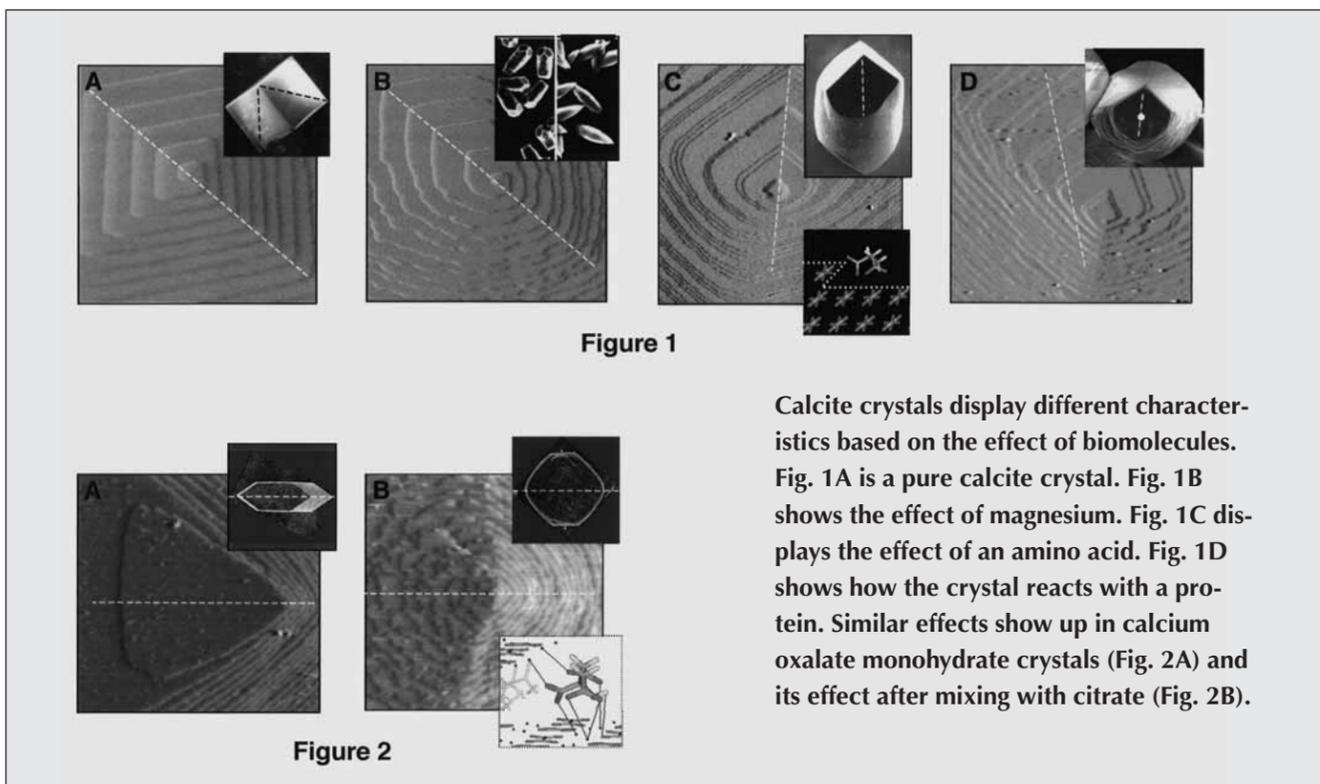


Figure 1

Figure 2

Calcite crystals display different characteristics based on the effect of biomolecules. Fig. 1A is a pure calcite crystal. Fig. 1B shows the effect of magnesium. Fig. 1C displays the effect of an amino acid. Fig. 1D shows how the crystal reacts with a protein. Similar effects show up in calcium oxalate monohydrate crystals (Fig. 2A) and its effect after mixing with citrate (Fig. 2B).

The changes were step-specific and directly determined the shape of the macroscopic crystals.

"Although crystal-growth modifications are diverse, the source of shape changes in these studies is clear," De Yoreo said. "Crystal shape is controlled by

step-specific interactions between growth modifiers and individual step edges on pre-existing crystal faces. Through this research, our team has shown that the classic theories of growth merge smoothly with the models proposed to explain shape modification."



NEWS YOU CAN USE



Right on track

Matthew and Carolyn Coelho set up a garden railroad in the lobby of Bldg. 551W last week as part of "Take a Model Train to Work Day." The model train aficionados are members of the Bay Area Garden Railway Society and will display and run some of their trains at the Alameda County Fairgrounds in Pleasanton Nov. 27-28.

JULIE KORHUMMEL/NEWSLINE

REGENTS

Continued from page 1

the continued management of Los Alamos."

Richardson, former energy secretary during the Clinton Administration, who signed an extension of the UC contract for five years as one of his last items of business in January 2001, has a long-term relationship with Los Alamos. He suggested UC partner with an industrial company that could manage safety, security and environmental areas.

"UC does the science. UC should do the research, UC should do the substance, but let others do the safety and security," he said. "I stood with Los Alamos while I was secretary. I stood by Los Alamos when I was in Congress. I stood by UC through thick and thin, through good times and bad times. For the good of the country, its national defense and the state of New Mexico and the good of UC, I encourage you to compete for the contract of Los Alamos."

Regent Norm Pattiz asked Richardson how the board could be assured that they have a chance at the contract considering all the security mishaps that have occurred at Los Alamos during the last few years.

"I believe there will be competition," Richardson said. "But you don't exactly have every institution scrambling to get the contract because there have been problems. I believe your bid would be enhanced by having a partner."

Other regents voiced concerns over the bad publicity surrounding Los Alamos and whether that would reflect poorly on UC.

"We're fixing the problems and that will diminish some of the publicity," Richardson said. "It's never going to be perfect. The easy thing would be to say 'let's not bid, let someone else do it.' But that doesn't serve the nation and it doesn't serve your interests."

Adm. Robert Foley, UC's vice president for Laboratory Management, told the regents on Thursday that informal surveys of congressional staff members and other influential Washington officials seem to indicate that the management problems at Los Alamos have had "no great impact at all" on the University's reputation, at least "from the D.C. perspective."

Foley also said UC is continuing its discussions with potential industrial partners to manage Los Alamos, but is insisting that UC retain its role as the prime contractor. "Two potential teaming partners have walked away because they wanted to be the dominant partner," Foley said.

The regents also heard a report of a survey of UC undergraduates' attitude toward the university's continued management of Los Alamos, LLNL and Lawrence Berkeley National Laboratory (LBNL). While more than half of the 17,000 students responding said they were undecided or lacked sufficient information to have an opinion, 34 percent expressed support for continuing UC's relationship with the labs. Thirteen percent expressed opposition, primarily on the grounds that the nuclear weapons research at LLNL and LANL conflicts with the university's mission.

The results among the students who had formed an opinion on the issue were similar to a survey of UC faculty earlier this year, which backed continued UC management of LLNL and LANL by a three-to-one margin. Regent Peter Preuss, chairman of the board's Committee on Oversight of the Department of Energy Laboratories, said the results of both surveys would be an important factor in the regents' decision on whether or not to bid for the three laboratory contracts.

The LBNL contract is due to expire at the end of January, 2005, and the LANL contract runs through November of next year. Foley said he expects UC to reach an agreement soon with DOE to extend the LLNL contract, also due to expire next November, for two years.

Technical Meeting Calendar

Friday
19

ELECTRONICS ENGINEERING TECHNOLOGIES DIVISION

"A Primer on Modeling Spatial Point Patterns via

Bayesian Methodology," by Matt Bogner. 10-11 a.m., Bldg. 141, room 1104, Nyquist Room. P-cleared. Contact: Becka Gordon, 2-2199.

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Harmonic Functions for Quadrilateral Remeshing of Arbitrary Manifolds," by Michael Garland, University of Illinois, Urbana-Champaign. 10 a.m., Bldg. 451, room 1025 (property protection area). For more information, go to <http://www.llnl.gov/casc/calendar.shtml>. Contact: Mark Duchaineau, (CASC) 3-1320, or Leslie Bills, 3-8927.

INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS

"New Perspectives on the Deaths of Ordinary Stars," by Patrick Huggins, New York University. Noon, Bldg. 319,

room 205. All attendees need to be badged. Contact: Wil van Breugel, 2-7195, or Rachael Mills, 2-6333.

PHYSICS & ADVANCED TECHNOLOGIES /N DIVISION

"Heavy Ion Physics with the CMS Detector at the LHC," by Bolek Wyslouch, Massachusetts Institute of Technology. 10:30 a.m., Trailer 2128, ballroom. Contact: Jennifer Klay, 2-4058, or Annette Cook, 2-7856.

LLNL/NAVAL POSTGRADUATE SCHOOL

"Uncooled Microbolometer Infrared Sensors," by Gamani Karunasiri, Department of Physics, NPS. 10 a.m., Bldg. 132N, conference room 1667. L-clearance required. Contact: Brenda Foster, 3-8257.

Monday
22

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Software Quality Assurance Subcommittee (SQAS)," by Barbara Campbell, LLNL/ CAR/CADSE. 10 a.m., Bldg. 451, room 1025 (property protection area). Contact: Barbara Campbell, (CADSE) 3-7834, or Angel Weigel, 2-5654.

Monday
29

LLNL/UC BERKELEY

"Quantum Mechanics and Relativistic Astrophysics," by George F. Chapline Jr., LLNL. 4:30 p.m., 1 LeConte, UC

Berkeley. Contact: Doug Wright, 3-2347, or Annette Cook, 2-7856.

Thursday
2

ENERGY & ENVIRONMENT DIRECTORATE

"Identifying Human Effects on Global Climate," by Benjamin D. Santer, Program for Climate Model Diagnosis and

Intercomparison (PCMDI). 1:30- 3 p.m., Bldg. 543 auditorium. Refreshments will be served. Contact: Camille Vandermeer, 3-2672.

Friday
3

INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS

"X-rays and The Formation of Sun-Like Stars," by Al Glassgold, UC Berkeley. Noon, Bldg. 319, room 205. All attendees need to be badged. Contact: Wil van Breugel, 2-7195, or Rachael Mills, 2-6333.

THE HOME PAGE



Guide dogs offer independence to the blind

Guide Dogs for the Blind is a local non-profit charity, which has operated from its Bay Area headquarters since 1942. The organization's mission is to provide enhanced mobility through partnerships with dogs whose unique skills are developed and nurtured by dedicated volunteers and a professional staff.

Funded wholly by private donations, Guide Dogs for the Blind provides specially trained guide dogs and training in their use to blind men and women throughout the community. These dogs are provided to eligible individuals at no cost. Guide Dogs for the Blind has its own dog-breeding program and provides extensive support to its graduates after the dog is placed.

The Laboratory has several connections to the Guide Dogs agency, located in San Rafael. Lab retiree Anita March, who many know from her work in Human Resources' New Hire Program, owned two guide dogs raised and provided to her through the program — a golden retriever, "Hollister" and more recently, a yellow Lab, "Gentle"

March said the dogs made it possible for her to work at the Lab full time. "They opened avenues to me. They provide love, companionship and gave me confidence in my mobility," March said, adding that employees would immediately smile and be receptive whenever they were approached by her and her canine companion.

"Guide Dogs for the Blind is a wonderful organization. I hope Lab employees continue to donate to this agency. Not only does the program train and provide the dogs to help blind people, but they also



JACQUELINE MCBRIDE/NEWSLINE

Guide Dogs for the Blind partners specially trained dogs with eligible individuals at no cost.

do tremendous follow-up to make sure the animals are cared for and healthy."

In addition, two TID employees, Rich and Chris Hunt, are active puppy-raising volunteers with Guide Dogs. Rich started raising guide dogs as a 4-H project when he was a youth and continued through the early part of his LLNL career, raising 15 puppies. Since 1998, he has raised another

five puppies with his wife Chris and daughter Jessica.

Hunt believes that of the 14 or so programs in the United States that train service dogs to enhance the mobility of vision impaired people, Guide Dogs for the Blind is one of the premiere organizations, offering much support to its volunteer puppy raisers, including extensive training for its puppy raising group leaders and a cadre of puppy raising advisers who help puppy handlers with difficult issues.

"To see the puppy you raised working as a guide dog is spine-tingling. To know that you had a hand in helping someone become a mobile, more active person makes the sleepless nights, soiled carpets, and sore shoulders all worth it." Hunt said.

Lori Mogan, Corporate and Foundation Development Manager for Guide Dogs states, "Since 1997 the Lab's HOME campaign has provided significant funding to assist Guide Dogs for the Blind to fulfill its mission. More than \$40,000 in contributions have been received from LLNL employees in seven years. Thank you for your support and for helping us create approximately 350 new guide dog teams each year. There are more than 2,000 blind and visually impaired individuals across the country and in Canada who are living fuller, more productive lives thanks to generous donors like you."

HOME directorate participation statistics

Directorate	Total employees	No. of contributions	Amount donated	Percent participation
Director's Office	151	92	60,194	61
Administration & Human Resources	335	186	63,272	56
Biology & Biotechnology Research	217	69	23,317	32
Chemistry & Materials Science	492	180	85,619	37
Chief Financial Officer	104	69	18,849	66
Computation	1037	325	156,862	31
Defense & Nuclear Technologies	364	116	55,806	32
Energy & Environment	293	97	38,273	33
Engineering	2052	501	241,722	24
Laboratory Services	1241	328	89,231	26
National Ignition Facility (NIF) Programs	199	66	25,350	33
Nonproliferation, Arms Control & International Security	230	72	31,429	31
Physics & Advanced Technologies	351	137	51,792	39
Safeguards & Security	362	51	12,716	14
Safety & Environmental Protection	745	252	98,414	34
S/L Vendor	—	—	29,532	—
Retirees	29	29	7,015	100
Others	24	24	2,415	100
Totals as of Nov. 18	8225	2594	1,091,811	31
Goal for the 2004 HOME Campaign			\$1.6 million	



CLASSIFIED ADS

See complete classified ad listings at
<https://www.ais.llnl.gov/newsline/ads/>

AUTOMOBILES

1996 - Mazda MPV mini-van, great condition. Power everything, rear air, tow pkg, tilt, am/fm-cass, ABS-all 4. little over 100K, \$4800.00 OBO. after 6pm 209-983-8372

1997 Thunderbird excellent condition, low miles, have to see to appreciate. Be sure to leave a message. 510-582-2938

1970 - Oldsmobile Cutlass Supreme. Exceptionally straight body, all chrome trim. No engine. Excellent Project Car! Price: \$2000.00 OBO. 925-584-5152

1997 - Nissan Quest 7-passenger. Silver. 90K miles 6-CD player, roof rack, new tires, front/rear A/C, excellent condition. \$6700 obo 925-803-1476

1997 - Toyota 4Runner SR5, 4WD, leather, auto, a/c, p/w, p/l, cd changer, sunroof, 127,000 mi., excel cond. \$9,200.00 o.b.o 925-243-1364

1995 - Mazda 626 LX 4cy. White, fully loaded, new brakes/tires, 130K \$2600/obo 925-449-2034

2002 - VW Passat, 1.8L Turbo, auto-all, 35k miles, 32 mpg-H, \$1,800 in extras, Custom chrome wheels, full warr to 2006, \$15,950 all maint. docs & manuals 209-814-4064

AUTOMOBILE ACCESSORIES

4 tires / rims for a 92 chevy 4x4 half ton pickup. 15 by 10 Eagle aluminum rims with decent 33 by 12.5 pathmaker radial tires. \$300/bo 209-368-4286

PICKUP PARTS - Chrome step bars, Dodge Ram, \$150. Stock tires/alloys, 6-lug Chevy, \$250. Tailgate caps, step/fleet side, \$15. Euro taillights \$40. 925-443-2173

NEW CHEVY PARTS - New Tonneau cover, black, 99-02 shortbed, \$500. New bedliners, under rail, any make/model, \$100 each. 925-443-2173

Kruz 20 inch rims with Kumho tires. Only fit the Ford Explorer 2002 or newer or the Chrysler 300M 2004 or newer. \$900 obo. 925-682-0744

BICYCLES

Huffy aluminum frame bicycle, hardly used \$100.00 925-455-8440

Womens 10 speed bike, great condition. \$30/bo 209-403-4942

BOATS

Ranger Bass boat 391v 200 Merc EFI motor runs great many new extras call to see or test. \$12,000 O.B.O 209-835-8632

CAMERAS

Canon S410 Digital Camera, 4 megapixel, brand new, in the box (never unpackaged). Call after 5 pm. \$300 209-835-2751

ELECTRONIC EQUIPMENT

Sony 32inch TV Excellant cond. only \$175.00 209-765-9622

Color 21 inch Proscan TV w/remote and matching black shelved TV stand. All in excellent condition. Stand alone was \$100. \$150. 925-648-0671

Printer. HP 3820 inkjet. \$20 925-449-9260

Concord Digital camera. \$150. 5 megapixels, PC/MAC compatible, 6X digital zoom, movie with sound, USB. Brand new in box. 925-443-3076

Alder Entertainment Center for big screen TV, Stereo Equip, CD/DVD, etc, paid \$3000.00 asking \$1500.00, Excellent Condition 925-443-0417

GIVEAWAY

2 Beautiful cats, Himalayan 2yrs, Tabby mix 9mo, Looking for loving family 1 or both. 209-823-8702

10 flat interior doors with knobs and hinges in good condition 925-735-3905

Large wood, pre-computer desk, excellent condition (59X29), FREE; small computer desk, FREE; small working b/w TV, FREE. 925-449-9260

We have 2 color 13 inch TVs to giveaway. Both work but both have issues. One is a GE TV/VCR combo and the other is an RCA. 209-835-8008

Three pair of womens loafer style shoes, size 11 1/2 W 209-830-9943

MGX amplifier, excellent condition. Sony equalizer, Pioneer CD changer (6 disc) both good condition. 925-443-2173

HOUSEHOLD

Electric lift reclining chair, great condition \$500 510-538-7444

Wood Futon with black cushion, you pick up in Manteca \$25 M. Doty 209-823-6501

Beautiful Glass Top Rattan Dining Table set w/ 4 matching Rattan chairs. Excellent Condition. Chair cushions removable to match your own decor 925-735-3905

Futon, queen size, pine frame. Mattress in excellent condition, hardly used. \$75 obo 925-294-8182

Oak book case w/lighted bridge, 6pc ivory Queen Bdrm set, China Cabinet, fridge, Moving must sell all 209-858-1206

Large Oak Excutive Desk with return and keyboard tray. \$150/bo 209-403-4942

DINING TABLE with 4 chairs. Two 18 inch leafs, trestle legs, pecan finish, custom pads included. Very good condition. \$300. 925-820-2921

DOUBLE STROLLER. Baby Trend Sit-N-Stand LX IV Plus. Reconfigurable for any pair of children in the 0 to 5 age range. \$75. 925-454-8827

Baby/children items for sale: clothes, high-chair, booster, crib bedding and more. 925-829-1474

Amana glass cooktop, GE spacemaker microwave, Maytag 24in double selfcleaning oven. All less than 15 yrs old , excellent cond. \$10 each 925-449-9294

Reclining sofa/chair, suede sage green w/brads, glass dining table, marble bakers rack, bar stools, more. Design change, my loss your gain. 925-516-8925

Black iron futon. Good condition. Bamboo living room set includes sofa bed, love seat, coffee table and end table, glass tops. 925-447-7768

Refrigerator - Full size Whirlpool - Approx. 8 years old. Almond - Works fine. \$100 obo. 925-989-8931

Solid Oak Bedroom Set. Excellent Condition. Armoire w/8 drawers \$150.00, dresser w/9 drawers \$150.00, night stand w/2 drawers \$75.00. 925-447-9647

GE electric 4 burner cooktop, ivory \$75, 2 table lamps, white, blue asian tree motif, white shades \$25.00 each. 925-462-7276

Dinette with 4 chairs \$295, dining rm set and china \$300, lamp table \$175, BO 925-447-3677

Refrigerator/Freezer - side-by-side, 21 cu. ft., with ice dispenser and water tap, clean and in excellent condition, \$200. or best offer. 925-449-9260

Stainless Steel propane patio heater. Sets on table. Brand new in box. \$179.99 new, \$119.00 obo. 925-240-7374

Solid oak roll top desk w/locking top. Paid \$1200 sell for \$400 firm. 925-516-8339

We have 2 Rescue fire escape ladders designed for 2nd story window escape. Steel chain construction. New in boxes. Never used \$30 each. 209-835-8008

3-pc lt. tan sect. leather sofa in good cond., \$200. 510-537-1474

Water Bed, 74in.x 54in. complete, incl. mattress, liner, heater & control, 3 bottom drawers, frame & headboard. Good condition. \$75 or B.O. 408-296-7637

Furniture. Light pine laminate, like new. Three-drawer dresser, desk with keyboard tray, and nightstand. Good for kid room. Photos. 925-837-7463

GE Refrigerator in Excellent Shape. Freezer on top. Color: Almond. \$150.00 or BO. 925-455-1730

Beautiful Beveled Stain glass windows 17in 41in ,call,matched pair Antique 600.00 OBO Absolutely the finest you will lay eyes on. 209-526-6272

Daybed, twin size w/ mattress and boxspring, white with brass finials, very nice \$200 OBO 510-614-8065

Queen adjustable bed \$450 OBO, solid oak entertainment center needs some repair \$100 OBO. 209-835-8132

New King, eastern, Beautyrest mattress, aurora luxury firm, best offer \$150 925-447-4819

Walnut dining table, approx. 48 inches in

diameter, with 4 chairs. In Good condition. Call 925-243-1734

LOPI Pellet stove for sale. Works great. \$200 or best offer. 925-240-7053

Antique(c.1905)round oak dining table (no leaves) and six chairs. \$1800.00 925-455-4576

Metal/Wood 3-pc Dining Ensemble table, 4 chairs, bakers rack, wine/bar cabinet, paid \$1500.00, asking \$900.00 Excellent Condition 925-443-0417

LOST & FOUND

Found---blue umbrella, A-4 parking lot in a Lab bicycle basket week of Oct. 25. Identify by brand or handle style/color. Call 2-0198. 925-961-1658

A set of keys were found by the west portal entrance to B132. Contact 2-7941

MISCELLANEOUS

Three tier concrete backyard fountain, black with a water nymph on the top tier. I may have a pump for it in my shed \$150.00 925-455-8440

Garage sale Saturday Nov 20, 8:00-12:00. 839 Cindy Lane, Livermore. Toys, clothes, household items, miscellaneous stuff. 925-606-0755

18in Obsession Telescope. Like New, with Lasemax collimator, finder, telrad, shroud, and wheel handles. \$4000 209-839-9441

Olympic weight set. Ivanko brand, pro quality. 470lbs with new bar! Mint condition!!! \$275 925-373-6255

Huge Plant Sale While Nursery Being Built-1555 Eden Plains Rd, Brentwood, Off Chestnut-Open Sat-Sun 9:00 to 4:00 925-240-6311

Apartment sized Stove/Oven - 20 inches wide, 4 burners, oven. 3 years old. \$100 obo 925-989-8931

Oak twin bookcase headboard w/mattress and frame. \$35. 5 H/P 3 in 1 lawn mower Excellent cond . \$50 925-516-8339

Car-top locking ski rack. This a Barrecrafters ski rack and it is in like new condition. It carries up to 4 pairs of skis. \$30. 209-835-8008

49er tickets 2 each, vs. Buffalo on Dec. 26, 2004. Good seats in upper reserved 925-443-4909

Christmas & More, 11/18 & 19 1-7pm, 11/20 10am-4pm, 5255 Tesla Road, Livermore. Contact 371-0824 or 925-449-6048

Two Percor treadmills, model M9.10e \$600.00 and Precor model M9.411 \$1950.00 925-736-6300

Seasoned oak firewood. 1/4 cord. \$75.00. Delivered Livermore only 925-516-8339

MOTORCYCLES

2004 - Honda Silverwing Scooter 120 mph Freeway legal Dark Burgandy and Silver in color Very clean \$7400.00 925-447-5525

2000 - Custom 883 Sportster. Lowered, Thunder head pipes, Corbin seat, plus lots more. 10,500 miles. \$7200.00 209-599-9594

2003 - Honda XR80 with less than 500 miles, real clean. Green sticker thru 4/05. Just had it checked out at Berkeley Honda, ready for Xmas. \$1300 firm. 925-683-7795

2000 - Honda Shadow Sabre, red 1100 mint cond. comes with options. \$7600 OBO. 209-551-8058

MUSIC INSTRUMENTS

Electronic drums. Roland brand, V drums. Full kit, TD10 module. Immaculate condition. \$2300.00 Call for details. 925-373-6255

Cymbal. Zildjian brand, titanium series, 18inch china. Used twice, like new! \$95 925-373-6255

PETS & SUPPLIES

Giveaway, 1 yr female Border Collie mix, spayed w/shots, good w/children looking for home w/pleanty of space to run. 209-823-8702

Rescued kittens looking for loving forever homes. Please consider adopting one or better yet, two! Vaccinated and spay/neutered. \$75 adoption fee. 209-833-0607

If you love kittens and are interested in providing a temporary foster home until we can find forever homes, please call me 209-833-0607

Hamster Cage w/accessories; \$10.00 925-456-3494

Pair of young Bearded Dragon Lizards. Very friendly, have been together all along. The last batch of eggs were a total of 43. All goes. \$120.00 OBO 209-983-8372

22in absolutely beautifl Japanese Kigo(Female) Koi fish for sale. Asking 450. 408-421-9517

10 month Lab/Husky/Shepherd - Max. Neutered. Moving so cannot keep. Would like a good home. 209-832-7204

Large Dog Kennel. Great condition. Barley used. Paid \$99 asking \$50. 510-537-7383

FREE TO GOOD HOME. Rescued female mixed breed dog. 9 months old. Black & tan. 55 pounds. Energetic & loveable. Located in Carson City. 925-449-9078

RECREATION EQUIPMENT

Dumbbells. Solid hex head style. 2@60lbs and 2@40lbs. Mint condition! \$65.00 925-373-6255

Olympic weight bench. Pro quality, heavy duty. Unused!!!! \$150 925-373-6255

Galileo Telescope with accessories and stand. Excellent condition, barely used. \$99.00 obo 925-240-7374

Mens skis boots & poles. Nordica boots size 29cm. Atomic Active Sport skis 200cm in length with Salomon bindings. Set-up used 3 times. \$100 209-835-8008

Kids Columbia ski gear, coat and bibs, size 6X. Columbia snow boots size 2. Lance ski boots size 2. All like new. \$75. for all. 925-443-1010

Camper, fits small PU, sleeps 4+, sink, water hook up, stove, table, curtains, lights, jacks, tools, \$550 925-337-2260

RIDESHARING

Express your commute, call 2-RIDE for more information or visit <http://www-r.llnl.gov/tsmp>.

Modesto - Vanpool needs one rider. Leaves from Home Depot at 6:35 am. Also, leave Lab at 4:45. Seven passenger van. Call for pricing. 209-576-0217, ext. 2-7459

Walnut Creek - Carpool as a rider/driver. PT, T, W, Th, flex. hours, 8:00-4:45 or 8:30-5:15, cross streets are Bancroft and Treat. Contact 510-710-7502, ext. 3-8552

Patterson - Vanpool has seats available for M-F, 7:30-4:00 shift. Tax-savings & ride home programs available. Call for details 209-892-2118, ext. 2-9502

Martinez - Looking to add another rider/driver to a car pool leaving Martinez. Leaving town 6:45 and leaving the lab 4:30. Will consider Pleasant Hill riders. 925-228-3759, ext. 3-7857

SERVICES

Licensed cleaning service #67099. Homes, offices, schools. East bay/Central valley. Free estimate, special lab prices. 12 yrs experience. 209-836-4355

Haircuts for kids at your place and daycare. Convenient and time saving. Licensed with 21 years experience. References available. 209-836-2137

HOLIDAY CRAFT SHOW Saturday, December 4th from 9am-5pm at 1711 Vancouver Way, Livermore. Handcrafted Items. 925-447-2844

QUILTERS Custom Statler Stitcher computerized machine quilting. Pick up and delivery at the Lab, or call for an appointment. 510-538-1027 510-538-1027

SHARED HOUSING

Castro Valley- 1 bd inlaw appt. Full bath. Kitchen/living rm. 650 sq/ft. Private entry. Quiet. \$800 /month. 510-276-1240

Stockton-Weston Ranch - Room for rent-Great commuter location-call for information 209-271-4923

Livermore - furnished room for rent. Clean/quiet. No pets/no smoking. Deposit. Share utilities. \$550.00/month. 925-449-1128

TRUCKS & TRAILERS

2001 - Dodge 4x4, 64k miles, rear slider, power everything, cd player, bed cover, tow package call 209-835-9105

1984 - Lazy Daze 24ft. class C motor home. Air, cruise. \$5000 OBO. 925-321-2608

2002 - Dutchmen Victory Lane Edition. Richard Childress Edition. 2 Slide outs 8x10 sealed garage. only used 3 times. Fully loaded. \$35,000 o.b.o. 209-835-2100

1997 - Dodge Dakota standard, 5 speed, AC, dual front air bags, sliding rear window, excellent condition, low 57K miles, kbb at \$5,595, asking \$4,500 2-5986 209-351-0055

WELLS CARGO (COMPLETE ENCLOSED TRAILER) Sport Model 5FT x 10FT LIKE NEW \$2195.00 415-816-5602

2000 - Chevy Tahoe, 83,000 miles. Pewter with grey leather interior. Power everything... Fairly new snow and mud tires. 4X4, Z71 tow package. 925-784-2717

1998 - 98 Komfort travel trailer, 24 ft with dinette slide, self contained. \$12,500 obo. This is below blue book. (925) 682-0744 925-682-0744

CAR TOTE excellent condition, like new, \$995 (compare at \$1400 new) 925-216-9687

95 - Chev 4X4 HD 2500, 350 motor, auto, pwr seats windows, mirrors, A/C works great, custom stereo, gooseneck hitch in bed, runs great \$8000 O.B.O 209-835-8632

2000 - Toyota, Tacoma Pickup 2WD Xtra cab PreRunner V6 loaded. New Brakes, Tires, Battery, 80,000 mile serviced. 1 owner. CarFax report. Kbb=\$13,080.00 209-858-4725

VACATION RENTALS

Cozy mountain cabin up near Arnold and Bear Valley Ski Resort. 4 bedr, 2 bath, wood burning fireplace. Plan for fun in the snow. 925-245-1114

Soooo cute beach cottage in Santa Cruz. 2 bedr, 2 bath, fully equipped kitchen, spa. 4 blks from ocean. Near harbor. 925-245-1114

Pinecrest - cabin available near Dodge Ridge skiing. 3 bdrm/2 bath, fireplace w/wood, microwave, pool table, level cleared access to covered parking, \$225/wknd 925-449-5513

Ridge Lake Tahoe (Heavenly Ski) \$500 Nov 27 to Dec 4. Room for 8. 510-553-9462

SOUTH LAKE TAHOE - 3 Bedroom 2 Bath Chalet, comfortably furnished, all amenities, RESERVE NOW FOR HOLIDAYS/SKIING! 209-599-4644

WANTED

Wanted, tile setter to install ceramic tiles on outdoor cement patio. Approximately 1000sf. 925-245-1414

Wanted - set of 1987/1988 IROC Camero mag wheels. Price negotiable. 209-869-3869

I am in need of shipping supplies (packing material, bubble wrap, boxes and such). Ongoing request. I ship all year. 925-240-7374

Desire electronic keyboard (e.g., Casio) for beginning students. Stand and/or seat a plus. Is yours not used anymore? 925-837-7463

Model trains - looking for help building N scale layout in Modesto, in exchange for using the layout. 209-547-0246

DOE's 'no-comment' policy protects classified information

By David Brown

OFFICE OF CLASSIFICATION AND EXPORT CONTROL

The Department of Energy requires us to manage our information. On the one hand, we have a contractual obligation to protect information classified by Congress and federal officials of the Executive Branch. On the other, we have a contractual obligation to disseminate results of fundamental research and a responsibility to the public stakeholders to tell them what we do and why.

We accomplish both obligations when we follow the information management strategy embodied in classification guides and follow the Lab review processes. Although the balance of protection and publication would be difficult even with the best guidance, we are faced with an additional difficulty of controlling secrets when knowledgeable, uncleared persons, deduce those secrets, publish them, and then believe their deduction of those facts opens a dialogue regarding those facts.

The DOE "no-comment" policy addresses this difficult and troublesome element of our information management strategy. It tries to address the fact that classification delays acquisition of information by those who threaten us, and a secret appearing in the public domain weakens the emphasis on that "delay strategy" of information protection.

The no comment policy is designed to address, in a consistent way, the maintenance of some delay by maintain-

ing uncertainty regarding the information released. We reduce the potential damage to national security by using the no comment policy to avoid validating, identifying, confirming or evaluating the information.

Although we occasionally have to make some coordinated responses to the publicly released information that contains classified information, those comments should neither validate the classified information nor open a dialogue on information subject to classification guidance. For example, if in the dialogue on the utility of stockpile stewardship someone tried to illustrate their position with a detailed "weapon design" we would "find the illustration interesting" and would have to "study it" but reply to the stockpile stewardship issue without any comment on, or analysis of, the design.

Most people who have studied the open literature can find numerous resources that discuss what we do and we should not identify the classified information.

Confirming that any publication is under classification review or contains classified information — even in general, compromises protected information by providing pointers to protected information and encouraging comparison with other documents in the public domain to discern what is classified.

We should never evaluate, or clarify the elements of protected information on the Web, thus allowing ourselves to become cornered into answering "incorrect" versus "no comment." Answering this soon carves out the answer for the inquirer.

The intent of the no comment policy is to continue to protect classified and other sensitive information, when classified

information is in the public domain. It may appear in a combination of accurate, inaccurate, classified and unclassified information. The problem for Lab employees and program managers is that we may not be able to correct inaccurate unclassified information without revealing what is classified, or increasing speculation regarding the information that we have not addressed (and can not).

Therefore, Lab employees can best respond within the no comment policy by consistently declining to comment in any way that gives clues about classified information, and by carefully planning, coordinating their comments through the review processes.

The no-comment policy: what you should do

If you are contacted by a member of the press, you should:

- Be courteous and professional and refer reporters to the Laboratory Public Affairs Office (2-4599), which may answer the questions directly or coordinate an interview with you.
- Not speak for the Laboratory or the University, but should speak from your own experience and express your own opinions.
- Only speak about matters of which you have direct knowledge.
- Politely tell reporters you cannot make speculative statements or answer questions to which you do not know the answer (an "I don't know..." is fine).
- Avoid Laboratory acronyms, as they are confusing and may be misinterpreted.
- Speak directly and concisely; avoid talking once you have answered the question.

- Remember that you have two rights: the right to speak to the news media, and the right not to speak to them; you can ask that the interview be ended at any time.
- Never to confirm or deny the presence or absence of classified information in the public domain; such statements are invariably classified.

Should you need assistance after receiving a call from a reporter on a deadline, you can take their number and get back to them after you've checked with LLNL Public Affairs and/or the LLNL Classification Office.

The principal points of contact are, in the Public Affairs Office, David Schwoegler, 2-6900 (newsguy@llnl.gov), and Dave Brown in the Office of Classification and Export Control, 3-3194 (brown10@llnl.gov).

http://www-r.llnl.gov/dnt/security/class_off/bulletins-guides/K99722.html

STOCKTAKE

Continued from page 1

The focus was the special relationship on nuclear weapon matters, including collaborative work on a wide variety of topics, such as experiments at the National Ignition Facility, the Nevada Test Site and both U.K. and U.S. hydrotest facilities.

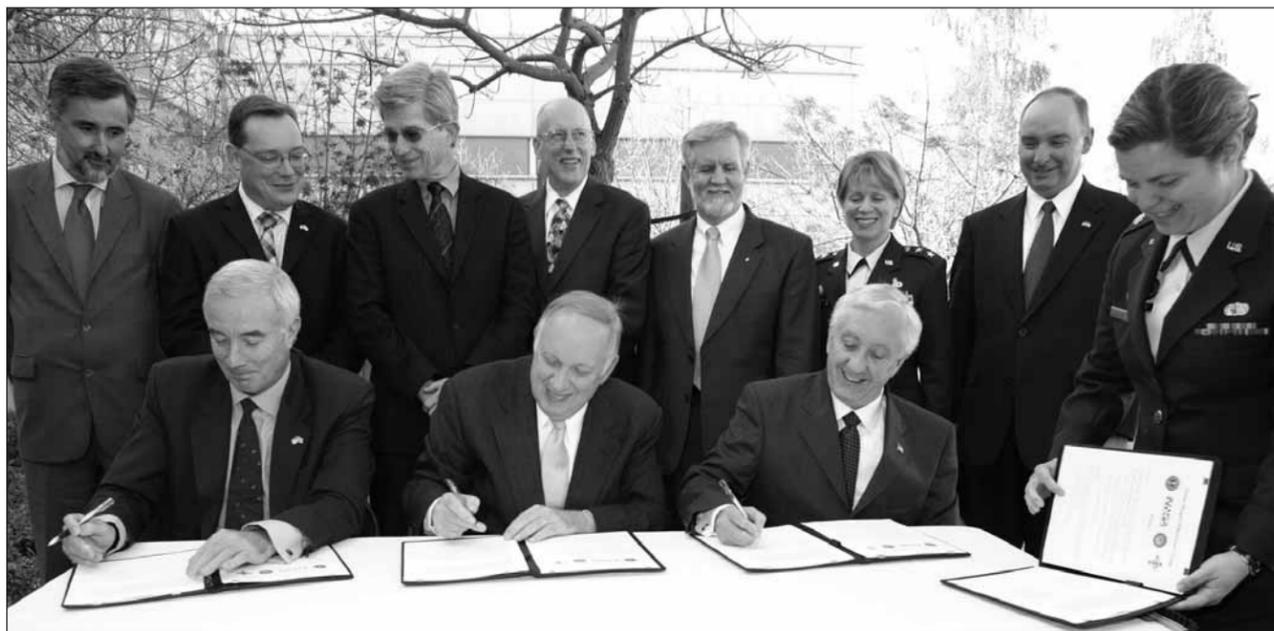
Titled "Stocktake 2004," this primarily classified gathering traces its history back to April 1959 in London. The purpose of the Stocktake meetings is to review the status of the collaboration established under terms of the 1958 U.S. / U.K. Mutual Defense Agreement.

Hosting and location alternate between Great Britain and the United States, at approximately 18-month intervals. Stateside the recent venues have rotated among Livermore, Los Alamos and Sandia national laboratories. This year, the honor was Livermore's. Because the U.K. program is expanding rapidly, there are increasing opportunities for cooperation.

Encompassing two days, Tuesday's events were kicked off by Laboratory Director Michael Anastasio, who with NNSA's Ambassador Linton Brooks, welcomed guests from the U.K.'s Ministry of Defence, as well as its Atomic Weapons Establishment. Professor Roy Anderson, recently appointed chief scientific adviser for the MoD, led the British delegation.

The opening day was devoted to tours and special briefings. Guests and dignitaries visited HEAF, the ASC Visualization Theater, Site 300, NIF, NARAC and the SuperBlock.

On Wednesday, briefings and discussions



JACQUELINE MCBRIDE/NEWSLINE

Seated and signing a cooperative agreement, left to right: Roy M. Anderson, chief scientific adviser, Ministry of Defence (MOD); Ambassador Linton F. Brooks, undersecretary for Nuclear Security, administrator, NNSA; Dale E. Klein, assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs. Standing left to right: Michael J. Baker, deputy director Strategic Technologies (Nuclear), MOD; Paul D. Taylor, director General Strategic Technologies, MOD; Everet H. Beckner, deputy administrator for Defense Programs, NNSA; David H. Crandall, assistant deputy administrator for Research, Development and Simulation, NNSA; S. Steve Henry, deputy assistant to the Secretary of Defense for Nuclear Matters; Maj. Gen. Trudy Clark, USAF, acting director, Defense Threat Reduction Agency (DTRA); A. Thomas Hopkins, director Technology Development, DTRA; Maj. Amy Magnus, USAF.

considered the nuclear defense, nuclear deterrence, nuclear science, current exchange mechanisms and weapons program support. The meeting ended with plans for the next Stocktake hosted in the U.K.

Heading the DOE/NNSA contingent, in addition to Brooks and Anastasio, were Everet Beckner, Mar-

tin Schoenbauer, Dave Crandall, Douglas Fremont, and U.S./U.K. coordinator Ward Sigmond; DNT's Bruce Goodwin; Director Pete Nanos and Susan Seestrom of Los Alamos; and Joan Woodard and John Stichman of Sandia. Department of Defense representatives included Dale Klein, Steve Henry, Gen. Trudy Clark and Adm. Charles Young.

Plight of red-legged frog illustrates problem of exotic species

Remove a frog to save a frog? To some, eradicating one species to save another doesn't make any sense. Despite this irony, biologists commonly face this dilemma in their everyday effort to conserve biological diversity.

The intentional or unintentional release of animals and plants outside of their native habitat or geographical region into another region can have a dramatic, lasting and unforeseeable impact on native species and habitats. At a minimum the result may be competition for survival and predation. Much worse is the potential for population extirpation (i.e., localized extinction) and extinction. Furthermore, the issue of exotic species introductions and impact on native species and habitats goes way beyond the borders of any county, state or country; the issue at hand is a global phenomenon changing the species make-up of each and every country on the planet.

As stated, most exotic species invasions result in the displacement or replacement of native species. When coupled with other population pressures, such as habitat destruction and modification, climate change or pesticides, the synergistic effect has the potential to be catastrophic. Case in point is the California red-legged frog (*Rana aurora draytonii*). It is California's largest native frog and was once found from Redding, Calif. to Baja, Mexico, but is now extirpated from 70 percent of its historic range. Most California red-legged frog population declines can be attributed to habitat loss and modification. But now more than ever, the remaining population segments are threatened by the spread of species introduced from the southeastern United States such as bullfrogs (*Rana catesbeiana*) and Centrarchid fish (i.e., bass, bluegill, etc.). In other words, habitat loss and exotic species invasion are recognized as the proverbial one-two punch leading to extinction.

LLNL's wildlife biologists are smack dab in the middle of this struggle, faced with exotic species at both the



By Michael G. van Hattem



California's biodiversity is world-renowned but is in jeopardy. The California red-legged frog has declined through much of its historic range and is protected under the U.S. Endangered Species Act. Predation by exotic species has greatly contributed to its decline.



MICHAEL G. VAN HATTEM

A grim ecological reality: the necropsy of a 2-year-old bullfrog revealed 10 native pacific treefrogs (*Hyla regilla*) in its stomach contents. This bullfrog was removed from the Drainage Retention Basin at the Livermore Site.



DAVID COOK, SONOMA COUNTY, CA

Bullfrogs prey upon all frog species. A large adult bullfrog that attempted to consume an adult California red-legged frog and suffocated on it as a result (note feet protruding from the bullfrog's mouth).



DAVID COOK, SONOMA COUNTY, CA

The adult California red-legged frog removed from the bullfrog at left. A ruler illustrates the size discrepancy between the two species.

HABITAT

Continued from page 1

coordinator, organized the visit.

Volunteers spent the day doing framing work on nine homes at the East Hayes Street site. The project consists of 22 three and four-bedroom homes that will be occupied by owners. This development incorporates "green" building techniques to maximize energy efficiency and sustainability.

Volunteers included Director Michael Anastasio, Wayne Shotts, deputy director for Operations, Steve Patterson, associate director (AD) for Engineering, Tomas Diaz de la Rubia, AD for Chemistry and Materials Science, Bill Goldstein, AD Physics and Advanced Technologies, Dona Crawford, AD for Computation, Elbert Branscomb, AD Biology and Biotechnology Research Program, Bill Bookless, AD Safety and Environmental Protection, Jan Tulk, AD Administration and Human Resources, and her husband Bob Tulk, Norm Burkhard, deputy AD for Ener-



JACQUELINE MCBRIDE/NEWSLINE

Steve Cochran and Tomas Diaz de la Rubia volunteered their time.

gy and Environment, Dave Leary, AD Laboratory Services, and Steve Cochran, acting AD Non-proliferation, Arms Control and International Security.

Other senior managers and employees who participated were: Bruce Warner, National Ignition Facility; Susan Houghton, Public Affairs; Karen Gunn, Director's Office; Lori Souza and Eric Ramon, CMS; Benjamin Grover, Tim Berg, and Laurie Robbins, Computation; Ann Stephens and Jeff Williams, Engineering; Cindy Atkins-Duffin, E&E; Pat Dempsey and Ed Helkenn, Laboratory Services; Greg Simonson and Eileen Vergino, NAI; John Post, NIF; Alan Wooton and Paul Springer, PAT; Terri Compton, SEP; and Moser and Laura Dixon of the 2004 HOME Campaign.

CMS and Director Office employees helped support the project by providing snacks and lunch. Habitat for Humanity International works in partnership with people in need at the local level to develop communities by building and renovating houses to provide decent homes in communities.

Livermore Site and Site 300.

At the Livermore Site, the centrally located Drainage Retention Basin has unfortunately become a repository for numerous exotic species. The DRB has a range of management objectives (see previous DRB Wildside article), including managing the lake in ways beneficial to the California red-legged frog. Exotic fish have recently been released into the basin in large numbers by an unknown source resulting in a situation that biologists need to remedy. The federal Endangered Species Act (Act) and Executive Order 13112 call for federal agencies to further the purposes of the act by engaging in conservation actions (help recover endangered species) and by limiting the spread of exotic species that threaten biological diversity.

The seemingly innocuous act of relocating, releasing or introducing species outside of their historic range, has very significant, harmful ramifications (not to mention it's illegal without permits). The act of stocking the DRB with bass and bullfrogs dramatically affects the survival of (endangered) native species already in peril. It is our responsibility to help conserve the biological diversity of California for future generations. California's critters are at stake; extinction is final.

For more information on exotic species see the following Websites: <http://www.invasivespecies.gov/> or <http://tncweeds.ucdavis.edu/> or contact Michael van Hattem at 4-6795 for information about this article and LLNL's Invasive Species Program. View previous Wildside articles by this author and others at the LLNL Wildside Series Archives at <http://www-envirinfo.llnl.gov/>.



Newsline
UC-LLNL

PO Box 808, L-797

Livermore, CA 94551-0808